Supreme Court, U.S.
FILED
(1)
No. 01-011323 MAR 06 2002
OFFICE OF THE CLERK

IN THE

Supreme Court of the United States

THE DOW CHEMICAL COMPANY,

Petitioner,

v.

ASTRO-VALCOUR, INC.,

Respondent.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

PETITION FOR A WRIT OF CERTIORARI

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QUESTIONS PRESENTED

Since their inception, the patent laws of the United States have required that patent rights originally vest in individual inventors – not in business entities.

The Federal Circuit has recognized a corporate inventor, has eliminated the requirement of conception (that the purported inventor understand he has created something new), and has thereby made it impossible to cross-examine an individual about the origin of an alleged invention.

The questions presented, therefore, are:

1. Whether the Patent Act of the United States, 35 U.S.C. § 102(g), requires an individual to have recognized he made a discovery before he qualifies as an inventor; and

2. (a) Whether, under the Patent Act, a federal court may find invention by a corporation, thus making it impossible to question any individual about his qualifications as an inventor.

(b) Whether that denial of the right to question anyone concerning the claimed invention denies the owner of the challenged patent its property rights under the Due Process Clause of the Fifth Amendment.

STATEMENT PURSUANT TO RULE 29.6

Petitioner The Dow Chemical Company states that is has no corporate parents, and that no publicly held company owns 10% or more of The Dow Chemical Company's stock.

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PETITION FOR A WRIT OF CERTIORARI

Petitioner The Dow Chemical Company hereby respectfully petitions for a writ of certiorari to review the judgment of the United States Court of Appeals for the Federal Circuit in this case.

OPINIONS BELOW

The district court's opinion (per Hurd, D.J.) granting petitioner's summary judgment motion (Appendix ("Pet. App.") 19a-33a) is published at 110 F. Supp.2d 104 (N.D.N.Y. 2000). The Federal Circuit's opinion (per Dyk, C.J.) affirming on other grounds (Pet. App. 1a-18a) is published at 267 F.3d 1334 (Fed. Cir. 2001). The Federal Circuit's order denying rehearing and rehearing *en banc* (*id.* 34a) is not otherwise published.

STATEMENT OF JURISDICTION

The Federal Circuit entered its opinion and order on September 28, 2001, and denied rehearing and rehearing *en banc* on December 6, 2001. Petitioner invokes this Court's jurisdiction under 28 U.S.C. § 1254(1).

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

Article 1, section 8, clause 8 of the Constitution provides:

> Congress shall have the power . . . to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their Respective Writings and Discoveries.

35 U.S.C. § 102(g)(2) provides that a person shall be entitled to a patent unless:

> Before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

STATEMENT OF THE CASE

This case works a fundamental change in patent law in two ways: (1) by ruling that an "inventor" need not realize he has invented anything but may gain priority over an actual inventor's patent because of accidental and temporary use of the process in question; and (2) by ruling that an "inventor" need not be one or more known individuals but may be a corporation, even one that denies making any invention, so that it is impossible for the patentee to question anyone about the alleged prior invention. These alterations in the basic design of the Patent Act significantly lessen the value of innovation; an inventor can never know what unrecognized and unpatented practices will be retrieved from corporate files and given the status of a prior invention.

An alleged infringer may invoke Section 102(g) of the Patent Act as a defense to infringement, claiming invalidity of the patent on the grounds that he is the prior inventor and conceived of the invention first. This case originated as a

patent infringement suit by The Dow Chemical Company ("Dow") against Astro-Valcour, Inc. ("AVI") and became a dispute over who was first to invent.

Throughout the history of U.S. patent law, inventors have been regarded as individuals who conceive of inventions. In applying the teachings of a licensed patent, the "prior inventor" here, respondent AVI, unintentionally stumbled upon a process that embodied a new idea without recognizing or understanding that new idea or its consequences. That recognition is the keystone of invention.

AVI's employees denied under oath in their depositions that they were inventors, asserting instead that they were simply practicing licensed technology. AVI asserted that none of its employees were "prior inventors" or that any one of them "conceived" the invention described in Dow's patent.

Despite the absence of a human inventor, any recognition by anyone at AVI of an invention or a new principle, and AVI's sworn disclaimer of invention, the Court of Appeals for the Federal Circuit declared AVI a prior inventor.

1. *History of the Patent.* Plastic foam products are manufactured using blowing agents. In the middle 1980s, concerns about the environmental impact of the commonly used chlorofluorocarbon blowing agents spurred research and development for superior performing, environmentally safer, and cost-effective blowing agents. To this end, Dr. Chung Park, a scientist at Dow, invented a process for producing superior foam utilizing *isobutane* as a blowing agent in conjunction with a stability control agent known as GMS, which resulted in U.S. Patent Nos. B1, 4,640, 933, 4,696,027, and 4,663,361.

Dr. Park's invention was conceived in late August 1984. The invention was then actually reduced to practice (a mechanical embodiment of the patented process was assembled) on September 13-14, 1984, and constructively reduced to practice (patents were filed disclosing the patented process and describing how to practice the invention) on December 24, 1985. Dr. Park's patents were assigned to Dow. The Park patents taught the use of *isobutane*, not butane, as the blowing agent.

On March 3, 1984, AVI conducted tests for the production of foam in accordance with an option to license certain technology and, on March 14, 1984, AVI purchased a license to that patented process held by a Japanese company and invented by Miyamoto, *et al.* (the "Miyamoto Patent"). The Miyamoto Patent taught the use of *butane*, not isobutane, as the blowing agent.

Dr. Park recognized and appreciated, and the Patent Office agreed, that the use of isobutane was a new and substantial improvement over the use of other blowing agents, including *butane*.

During the course of its experiments, AVI was unable to obtain butane. Since isobutane was available to AVI, AVI's employees substituted isobutane for the butane described in the Miyamoto patent. AVI found that isobutane worked well and, not recognizing any difference between isobutane and butane, decided to obtain a license of the Miyamoto patent for the technology it thought its employees were practicing.

Over the next two years AVI used butane, never recognizing, understanding, or acknowledging that the use

of isobutane was a new and superior invention – a new idea with new consequences. Indeed, AVI's continued use of butane after using isobutane demonstrates its failure to understand the significant difference.

There is no indication that AVI employees understood the substantial advantage of isobutane over butane until 1986 (well after Dr. Park's invention was conceived and reduced to practice), when it declared that isobutane "was a hands down winner." AVI began commercial foam production utilizing isobutane as a blowing agent in September 1986.

Both parties sought reexamination by the Patent and Trademark Office ("PTO") in 1994, and on September 10, 1996, the PTO concluded that Dow's patent (which describes isobutane) was patentable over the Miyamoto patent (which describes butane) under 35 U.S.C. §§ 102, 103, and 112.

2. *The Proceedings Below.* Dow filed suit for patent infringement against AVI in the United States District Court for the Northern District of New York. AVI moved for summary judgment on the ground that the patents-in-suit (the "Park patents") were invalid under 35 U.S.C. § 102(g). Dow cross-moved for summary judgment dismissing AVI's § 102(g) invalidity defense. The District Court granted summary judgment in favor of AVI, concluding that AVI's foam production utilizing isobutane as a blowing agent anticipated the Park patents.

On Dow's appeal, the Federal Circuit affirmed the decision of the District Court on different grounds, noting that this case did not present a question of anticipation under § 102(a) since the PTO had found that the Miyamoto patent did not anticipate Dow's patent but, rather, raised the question of anticipation under § 102(g).

The Federal Circuit addressed the question of whether, "when challenging the validity of a patent under 35 U.S.C. § 102(g), a prior inventor must have known that he was an inventor," and held that "such a state of mind is not required." Pet. App. 1a. Rather, without identifying a single inventor, or anyone at AVI claiming to be an inventor, the panel concluded that AVI was a prior inventor since its employees concluded that the patented process AVI had licensed produced good foam with isobutane, which was not covered by the license AVI had obtained. Of course, after obtaining the license and for a period of two years, AVI also thought butane produced good foam.

Dow then petitioned the Federal Circuit for a panel rehearing and a rehearing *en banc* on the grounds that the Court had (i) eliminated the requirement of conception of an invention, (ii) improperly drawn inferences in favor of the summary judgment movant, (iii) created an unidentifiable corporate inventor, (iv) eliminated the requirement of corroboration of an inventor's testimony of conception, and (v) violated the Due Process clause of the United States Constitution by creating a prior unidentifiable corporate inventor unavailable for cross-examination or confrontation. In short, AVI had not appreciated isobutane as an advancement over butane, and in any case, there was no one for Dow to cross-examine on the issue.

The Federal Circuit denied Dow's petition for a rehearing, and this petition for a writ of certiorari followed.

REASONS FOR GRANTING THE WRIT

The petition should be granted for two reasons.

First, the Federal Circuit's decision directly conflicts with the long-standing meanings of "inventor" and "invention" as articulated by this Court, and by the Federal Circuit itself, that an invention occurs only when a human, not a corporation, actually realizes that he has thought of or created something that is significantly new and different.

Second, the Federal Circuit's new rule recognizing corporate inventors violates the Due Process Clause of the Fifth Amendment by denying patentees the right to examine "prior inventors" to ascertain whether they understood they had produced anything new.

The Federal Circuit's recognition of a corporate inventor, its recognition of an invention without the recognition of any individual inventor, and its denial of a patentee's right to examine any such individual inventor, in combination, will discourage the innovation which often requires tens of millions of dollars in investment.

I. *Certiorari* Should Be Granted Because The Decision Below Conflicts With Decisions Of This Court And Frustrates The Policy Of The Patent Act By Discouraging Innovation.

A. The Decision Below Conflicts With Decisions Of This Court Regarding The Meaning Of Invention.

The Federal Circuit's holding that a company may be an inventor solely because its employees were satisfied with what they made without realizing that it was an invention or

a new process is fundamentally at odds with the long-standing requirements of invention.

This Court's decision in *Pfaff v. Wells Electronics, Inc.*, 525 U.S. 55, 60 (1998), addressing the meaning of Section 102 of the Patent Act, stated: "The primary meaning of the word 'invention' in the Patent Act unquestionably refers to the inventor's conception rather than to a physical embodiment of that idea." Conception of an idea and its physical embodiment, or actual reduction to practice, are distinct activities, the former being the essence of invention, and the latter being unnecessary for invention. *Id.* at 60-61.

United States v. Dubilier Condenser Corp, 289 U.S. 178, 188 (1933) is to the same effect: "[I]nvention . . . is the result of an inventive act, the birth of an idea . . . the product of original thought . . . . Though the mental concept is embodied or realized in a mechanism or a physical or chemical aggregate, the embodiment is not the invention." Whereas the inventor's invention is the "product of original thought," the mechanic merely constructs the embodiment of that invention.

This definition of invention has been adhered to by the Federal Circuit,[1] until this case. Here, deviating from that

1. *See, e.g., Acromed Corp. v. Sofamor Danek Group, Inc.*, 253 F.3d 1371, 1379 (Fed. Cir. 2001) (conception is the "touchstone" of invention); *Coleman v. Dines*, 754 F.2d 353, 359 (Fed. Cir. 1985) (invention requires conception of a definite and permanent idea); *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1378-79 (Fed. Cir. 1986), *cert. denied*, 480 U.S. 947 (1987) (same); *Cooper v. Goldfarb*, 240 F.3d 1378, 1382 (Fed. Cir. 2001) (invention requires both conception of a definite and permanent idea and

standard, the Federal Circuit now allows invention to be shown by evidence of appreciation that something made works well. That is not invention.[2]

Dow agrees with the Federal Circuit that an inventor need not know his invention is patentable. Still, he must recognize that he has wrought something new or he has not advanced the arts and sciences.

The long-standing definition of "conception" embraced by the Federal Circuit dates back to 1897, and was first articulated in a discussion of the proof of priority of invention:

> The conception of the invention consists in the complete performance of the mental part of the inventive act. All that remains to be accomplished, in order to perfect that act or instrument, belongs

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(Cont'd)
contemporaneous appreciation of invention); *Mycogen Plant Science, Inc. v. Monsanto Co.*, 252 F.3d 1306, 1314 (Fed. Cir. 2001) (same); *Sewall v. Walters*, 21 F.3d 411, 415 (Fed. Cir. 1994) (determining invention is determining who conceived).

2. Appreciation is crucial to a determination of whether an inventor who conceived an idea actually reduced that idea to practice. Actual reduction requires that the inventor appreciate that the device will work for its intended purpose. *Purdue Pharma L.P. v. Boehringer Ingelheim GMBH*, 237 F.3d 1359 (Fed. Cir. 2001) (actual reduction to practice requires "contemporaneous recognition and appreciation of the invention"). Still, a prior inventor must have appreciated the *invention* – the distinction between what he has made and what has come before. *Mycogen Plant Science, Inc. v. Monsanto Co.*, 243 F.3d 1316 (Fed. Cir. 2001). Here, the Federal Circuit has conflated the requirements of conception and reduction into mere reduction.

> to the department of construction, not invention. It is therefore the formation, in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice, that constitutes an available conception, within the meaning of the patent law.

Mergenthaler v. Scudder, 11 App. D.C. 264 (1897).

Since conception is the "birth of an idea," the "product of original thought," or "the formation, in the mind of the inventor, of a definite and permanent idea of the complete and operative invention," it necessarily requires that the inventor be aware of his own inventive act. Contrary to the self-awareness inherent in the formation of an idea, a mechanic's appreciation of his device need not be accompanied by any knowledge of the underlying idea. A child can make a new type of toy boat and appreciate that it floats without knowing that what he has done embodies a new idea. Such appreciation is far from the birth of an idea or the product of original thought. It will not advance technological knowledge as there is no knowledge that technology has been advanced.

B. The Decision Below Conflicts With The Policy Of The Patent Act.

In defining "inventions patentable," Section 101 of the Patent Act states that "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor . . ." 35 U.S.C. § 101. The statute, thus, describes an "inventor" as one who invents

or discovers – not as one who merely makes. Accordingly, qualifying as an inventor requires something beyond mere manufacture or practice – it requires recognition and understanding of a new idea.

The redefining of conception as appreciation is also at odds with the underlying policy of the Patent Act. "The patent laws promote innovation by offering inventors exclusive rights for a limited period as an incentive for their inventiveness and research efforts." *Diamond v. Chakrabaraty*, 447 U.S. 303, 307 (1980).[3] Thomas Jefferson said, "ingenuity should receive a liberal encouragement." *Id.* at 308-09. He did not say "mere observation that a device works should receive a liberal encouragement."

The principle at stake here may be illustrated by an example. Alexander Fleming, for instance, discovered penicillin by accident, but he understood at once that he had hit upon a new and useful antibiotic. He might have disregarded the effects of blue mold in his petri dish as an

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3. The incentives underlying the U.S. patent system are intended ultimately, to benefit the public. "Through the issuance of patents, the USPTO encourages technological advancement by providing incentives to invent, invent in and disclose new technology worldwide . . . Patents drive technological innovation and, in turn, such innovation has driven the remarkable increase in U.S productivity and the resulting real growth of the economy." *United States Patent And Trademark Office, Patent Public Advisory Committee, Annual Report*, November 30, 2001, at 4.

The incentives have proven to be successful. "Conservative economic estimates place the value of patents and other forms of intellectual property as accounting for two-thirds of the market value of corporate America. Patents are becoming more widely recognized by the general public as valuable capital in today's economy." *Id.*

oddity and moved on to other experiments. In that case, he would not have qualified as an inventor. To the contrary, he recognized that something new – something extraordinary – had taken place. Seeing the results in the petri dish was "Fleming's 'Eureka' moment."[4] That would qualify as an invention in American law.

No such moment was experienced by anyone at AVI prior to 1986. After licensing the Miyamoto technology, and for two years thereafter, AVI used butane without any understanding or recognition that the isobutane it had formerly used out of necessity offered a significant advantage.

There is no indication that Congress meant to create a separate and distinct meaning for "inventor" for purposes of Section 102(g). Since Section 102(g) "relates to the question of priority of invention between rival inventors" (S. Rep. No. 1979, 82d Cong., 2d Sess. (1952), *reprinted in* 1952 U.S.C.C.A.N. 2399) rather than rival manufacturers, it necessarily relates to the question of priority of invention between those who have comprehended the novelty of the invention.

Likewise, there is no indication that Congress intended to weaken the standard for invention for purposes of Section 102(g).

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4. Time 100: Scientists & Thinkers – Alexander Fleming, Dr. David Ho, *Bacteriologist Alexander Fleming* at http://www.time.com/time/time100/scientist/profile/fleming.html. That moment was "an instant of great personal insight and deductive reasoning. He correctly deduced that the mold must have released a substance that inhibited the growth of the bacteria." *Id.*

II. *Certiorari* Should Be Granted Because The Decision Below, In Violating The Patent Act, Violates The Due Process Clause Of The Fifth Amendment.

In violating the Patent Act in the way that it did the Federal Circuit has in turn violated the Due Process Clause of the Fifth Amendment.

A. The Decision Below Eviscerates The Presumption Of Validity Of Existing Patents By Eliminating The Requirement Of Clear And Convincing Evidence of Prior Invention.

The Federal Circuit's ruling effectively negates the statutory presumption of validity afforded all patents.

Under 35 U.S.C. § 282, all patents are presumed valid. *Cardinal Chemical Co. v. Morton International, Inc.*, 508 U.S. 83, 93 (1993). "The presumption of patent validity must be overcome by clear and convincing evidence." *Dennison Manufacturing Co. v. Panduit Corp.*, 475 U.S. 809, 810 (1986).

Since patents are presumed valid, and since conception is the touchstone of invention, the Federal Circuit previously required that a prior inventor's testimony of conception be corroborated by independent witnesses in order for such proof to be clear and convincing. *Acromed Corp. v. Sofamor Danek Group, Inc.*, 253 F.3d 1371, 1379 (Fed. Cir. 2001).

In concluding that a corporate entity, or, collectively, its employees, was the prior inventor, the Federal Circuit disregarded its own long-standing requirement that the person who invents be prepared to explain the mental process of

invention and to have such testimony corroborated.[5] Employees of a corporate entity may perform the necessary function of corroboration, but only the inventor can testify regarding the mental process of invention. Neither AVI nor the Federal Circuit ever identified a cross-examinable inventor. Indeed, AVI disclaimed the occurrence of invention, stating that it was merely practicing the Miyamoto patent under a license.[6]

In disregarding the requirement of corroborated testimony of an identifiable inventor, the Federal Circuit has effectively negated the requirement of clear and convincing evidence of prior invention, and thus has rendered illusory

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5. *Acromed Corp. v. Sofamor Danek Group, Inc.*, 253 F.3d at 1379 (since conception is touchstone of inventorship, inventor's testimony regarding inventorship requires corroboration to be clear and convincing); *Sandt Technology, Ltd. v. Resco Metal and Plastics Corp.*, 264 F.3d 1344, 1350 (Fed. Cir. 2001) (since inventor's testimony may be self-serving, corroboration of inventorship is necessary); *Purdue Pharma L.P. v. Boehringer Ingelheim GMBH*, 237 F.3d 1359, 1365 (Fed. Cir. 2001) (inventor's testimony requires corroboration); *Borrow v. Herz*, 666 F.2d 569, 572-73 (Fed. Cir. 1981) (same).

6. For instance, AVI asserted that,

> If Dow wishes to assert or contend that any of the AVI employees are "prior inventors" of the isobutane patents for some legal advantage, that is Dow's prerogative, but the underlying facts do not change. . . . Any reference to "conception" . . . is clearly intended to be the decision by an AVI employee to use the process in the United States which was conveyed to AVI by the Japanese.

(R. Appeal, J.A. A957-58.)

the presumption of validity of a patent. Rather, the federal courts are now free to find a prior invention where there is no testimony regarding conception – indeed, not even an assertion of any invention by any employee – no corroboration by independent witnesses, and no identifiable inventors.

B. The Decision Below Violates The Due Process Clause By Making Examination Of An Identifiable Inventor Impossible.

The right to cross-examine a prior inventor is "inviolable." *Borrow v. Herz*, 666 F.2d 569 (Fed. Cir. 1981). Since due process requires notice and an opportunity to be heard, including the right to confront and cross-examine adverse witnesses prior to the deprivation of a property interest (*Goldberg v. Kelly*, 397 U.S. 254, 269 (1970)), a meaningful hearing is required before an individual may be deprived of a property right (*Mathews v. Eldridge*, 424 U.S. 319, 332-35 (1976)). In creating a prior unidentifiable "corporate" inventor with no individual claimed to have invented anything, the Federal Circuit has made it impossible for Dow or any other patent owner to examine anyone to determine the validity of the claim of invention. That is essentially the deprivation of any meaningful hearing and violates the Due Process Clause.

A patentee must be able to inquire whether or not the "prior inventor" ever recognized or appreciated the new idea, and when and how that understanding occurred. Where a patentee is not afforded the ability to confront a "prior

inventor" regarding invention, the latter's status as an inventor is never truly shown but cannot be disproved.[7]

The Federal Circuit's ruling will have very deleterious results. It encourages companies to seek out and uncover previously unappreciated evidence of a practice or product in their archives in order to invalidate existing patents without ever demonstrating, or even while denying, that there was an individual inventor.

Companies with extensive research and development resources and voluminous archives documenting countless experiments also own the greatest percentages of U.S. patents.[8] Under the Federal Circuit's new rule, the emergence and institutionalization of "patent archive invalidation retrieval systems" are inevitable as large companies compete to invalidate rival's patents by showing a product or process, unrecognized as new at the time, had been tried, accidentally or deliberately, prior to the date of an invention that was patented. The incentive to innovate will be dampened by the knowledge that there exists such unknown information in file cabinets all over the world so any patent obtained may be invalidated without warning.

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7. That Dow had an opportunity to depose a number of employees is meaningless. Once the employees disclaimed invention, Dow was denied the opportunity to make meaningful inquiries regarding the circumstances surrounding when and how the employees came to recognize the new idea.

8. For a list of organizations ranked according to the number of utility patents held, see *United States Patent and Trademark Office, Information Products Division/TAF Branch, Patenting by Organization 2000.*

Even more unsettling is the Federal Circuit's disregard of AVI's employees' and attorney's *actual disclaimer of having made any invention*. The Federal Circuit ignored the representations of AVI and its employees that they did not invent anything but, rather, were merely practicing the patent they had licensed, which did not specify the use of isobutane. It is impossible to cross-examine an inventor who does not exist. It is outrageous to be told that your patent is worthless because of a prior invention by a non-existent inventor. The Federal Circuit has transformed Section 102(g) from a guide to determine priority of invention between actual inventors to a device for non-inventors to overcome the absence of any invention.

The Federal Circuit has created a rule that forbids patentees from relying on alleged infringers' denials of invention. Consequently, the ruling places on patentees the impossible burden of proving that a company disclaiming invention is telling the truth – that a prior non-inventor did not invent the invention first. Unless the patentee can perform the impossible task, with nobody to cross-examine, it will lose its patent, as Dow did.

The effective denial of the presumption of validity, the impossible burdens imposed on a patentee, and the advantage awarded companies with large archives, all work to punish real invention and discourage the expenditure of resources that inventing and patenting require.

CONCLUSION

For the foregoing reasons, the petition for a writ of certiorari should be granted.

Respectfully submitted,

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APPENDIX

APPENDIX A — OPINION OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT DATED SEPTEMBER 28, 2001

THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

01-1003

THE DOW CHEMICAL COMPANY,

Plaintiff-Appellant,

v.

ASTRO-VALCOUR, INC.,

Defendant-Appellee.

DECIDED: September 28, 2001

Before MICHEL, BRYSON, and DYK, *Circuit Judges*.

DYK, *Circuit Judge*.

This case presents the question of whether, when challenging the validity of a patent under 35 U.S.C. § 102(g), a prior inventor must have known that he was an inventor. We conclude that such a state of mind is not required. Accordingly, we agree that the invention covered by the contested claims of U.S. Patent Nos. B1 4,640,933 (the " '933 patent"), 4,694,027 (the " '027 patent"), and 4,663,361 (the " '361 patent") assigned to the Dow Chemical Company ("Dow") was first invented by defendant Astro-Valcour, Inc. ("AVI"). Also, we agree that AVI did not

abandon, suppress, or conceal its invention. Accordingly, we affirm the district court's decision invalidating claim 3 of the '933 patent, claim 1 of the '027 patent, and claim 1 of the '361 patent. *Dow Chem. Co. v. Astro-Valcour, Inc.*, 110 F. Supp.2d. 104 (N.D.N.Y. 2000).

I.

Plastic foam products may be made by using a blowing agent to expand a polystyrene, polyethylene, or other polymer resin. A blowing agent is a chemical that produces an above atmospheric pressure inside the cells of a polymer, causing the individual cells to grow, thus transforming the polymer from a high density solid to a low density cellular product. Prior to the middle 1980s foam manufacturers commonly used chlorofluorocarbon ("CFC") blowing agents to produce polyethylene foam, but environmental concerns prompted the search for more environmentally sensitive, cost-effective blowing agents that could produce high-quality foam.

Non-party Japanese Styrene Paper Company ("JSP") held a patent claiming a process for producing foam using non-CFC blowing agents. JSP filed a patent application for a patent on the process in the United States Patent and Trademark Office ("PTO") on April 19, 1968, which resulted in U.S. Patent No. 3,808,300 issued to Miyamoto, et al. (the "Miyamoto patent").

In 1983, AVI began to develop alternatives to the CFC blown foams. An AVI employee, Mr. Fred Collins, became aware of the Miyamoto patent and initiated negotiations for a license to use the patented invention. On March 3, 1984, in a laboratory in Glens Falls, New York, AVI tested the

feasibility of making foam by following the teachings of the Miyamoto patent and using isobutane as the non-CFC blowing agent. On March 14, 1984, AVI purchased a license to the Miyamoto patent from JSP. On August 22, 1984, at its Glens Falls, New York production facility, AVI made foam by following the teachings of the Miyamoto patent, again using isobutane as a blowing agent.

Subsequently, AVI began to develop a commercially viable process of producing foam using isobutane as a blowing agent. Because of safety concerns due to the flammability of isobutane, AVI abandoned the implementation of the process at its Glens Falls facility and, in the winter of 1985-86, built a new facility in Plymouth, Indiana. AVI began commercial production of isobutane-blown foam by September 1986, and by October 13, 1986, had sold 190 rolls of isobutane-blown polyethylene sheet foam.

Dr. Chung Park, a scientist at Dow, also developed a process for producing isobutane-blown foam, which resulted in the '933 patent, the '027 patent, and the '361 patent (collectively the "Park patents"), of which Dow is the assignee. The inventions claimed in the Park patents are directed to plastic foam products and methods of making the foam. The '933 patent claims the finished foam; the '361 patent claims the chemical composition that may be expanded to form the finished foam; and the '027 patent claims the process for making the foam from the precursor chemical composition. Dr. Park recognized that the choice of blowing agent was an important factor in the quality and long-term stability of the finished foam product. His recognition that the use of isobutane as a blowing agent in conjunction with a stability control agent known as glycerol monostearate ("GMS") could

be used to make quality foam led to the patents in suit. The parties agree, for purposes of this appeal, that Dr. Park conceived the claimed inventions in late August 1984.[1] Dr. Park actually reduced the claimed inventions to practice on September 13-14, 1984, and constructively reduced the claimed inventions to practice on December 24, 1985, by filing patent applications.

The Miyamoto patent was not considered by the PTO during the prosecution of the applications leading to the Park patents. In 1994, however, both Dow and AVI filed requests for Reexamination of the '933 patent with the PTO, citing the Miyamoto patent, among other references. The PTO merged the two requests, with the Miyamoto patent being the primary reference of concern, and on September 10, 1996, issued Reexamination Certificate No. B1 4,640,933, thus concluding that that the Park invention claimed in the '933 patent was patentable over the Miyamoto patent under 35 U.S.C. §§ 102, 103, and 112. Reexamination of the '361 and the '027 patents was not requested.

II.

Dow commenced the present action on September 21, 1995, by filing suit against AVI for infringement of two unrelated patents.[2] On October 2, 1996, while the action was

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1. The parties apparently cannot agree on the exact date. While AVI asserts that the conception date was August 28, 1984, Dow asserts that the inventions were conceived on August 24, 1984. This four-day difference is, however, immaterial to resolving the issues before us.

2. By stipulation of the parties, the claims relating to the unrelated patents have been dismissed.

pending, and shortly after issuance of the Reexamination Certificate by the PTO, AVI filed a counterclaim for a declaratory judgment of invalidity with respect to all the claims of the '933 patent. On December 30, 1996, Dow filed an amended complaint alleging infringement of the '933, '027, and '361 patents, and on January 17, 1997, AVI amended its counterclaims to seek additional declaratory judgments of invalidity of all of the claims of the '027 and '361 patents. On November 9, 1999, AVI moved for summary judgment that claim 3 of the '933 patent, claim 1 of the '027 patent, and claim 1 of the '361 patent were invalid under 35 U.S.C. § 102(g) based on AVI's making of the foam claimed in the Park patents prior to Park's conception and reduction to practice of the invention. The United States District Court for the Northern District of New York found that AVI presented clear and convincing evidence that it had made the inventions prior to Park's inventive efforts and that Dow raised no genuine issue of material fact to dispute this. Accordingly, the district court granted AVI's motion for summary judgment of invalidity. *Dow Chem. Co. v. Astro-Valcour, Inc.*, 110 F. Supp.2d 104 (N.D.N.Y. 2000).

The district court found that it was not disputed that AVI had "manufactured a physical embodiment of the Miyamoto invention, meeting the limitations of the Park patents, as early as March 3, 1984, and in any event no later than August 22, 1984." *Id.* at 106 (footnote omitted). The court also found that AVI used isobutane as a blowing agent and a GMS stability control agent on both dates. *Id.* at 107. Although Dow questioned whether AVI used normal butane (n-butane) rather than isobutane during the March 3, 1984, production, the district court found that, as he testified, an AVI employee

had ordered and installed a tank of isobutane for use as the blowing agent in the testing, that test records showed that AVI had used isobutane as a blowing agent, and that AVI employees witnessed the production of isobutane-blown foam. The court therefore found that no genuine issue of material fact existed regarding whether AVI used isobutane in March and August 1984. *Id.* The district court additionally found that AVI had produced isobutane-blown foam using a GMS stability control agent that met the limitations of the Park patents prior to Dow's reduction to practice on September 13-14, 1984. *Id.* at 108.

Dow argued that the foam produced by AVI in March and August of 1984 could not constitute an invention made in this country by AVI under § 102(g) because JSP had already constructively reduced the invention to practice by filing the Miyamoto patent application in 1968, but the district court found no support for the "proposition that the actual reduction to practice by a licensee of a United States patent holder, undertaken prior to conception by a later inventor, is ineffective to constitute prior art. To the contrary, such reduction to practice anticipates the later concept." *Id.* at 107-08.

Next, the district court addressed the issue of whether AVI abandoned, suppressed, or concealed the invention that it made, and found that the invention had been disclosed to the public by the issuance of the Miyamoto patent in 1974. *Id.* at 108. Thus, the district court found that AVI's activities subsequent to its making isobutane-blown foam in 1984 were irrelevant to the issue of abandonment, suppression, and concealment, since the invention had already been disclosed to the public in 1974.

The district court concluded that AVI's production of foam using isobutane as a blowing agent and GMS as a stability control agent anticipated the Park patents. The district court granted AVI's motion for summary judgment that the claims-at-issue[3] of the Park patents were invalid under 35 U.S.C. §102(g), dismissed Dow's claims for infringement of the Park patents, and entered final judgment accordingly. *Id.* at 109-10. Dow filed this timely appeal to this court. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

III.

Summary judgment is properly granted when "there is no genuine issue as to any material fact and . . . the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c); *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303, 1307, 46 USPQ2d 1752, 1755 (Fed. Cir. 1998). We review a district court's grant of a motion for summary judgment without deference. *Ethicon Endo-Surgery, Inc. v. United States Surgical Corp.*, 149 F.3d 1309, 1315, 47 USPQ2d 1272, 1275 (Fed. Cir. 1998).

IV.

At the outset, we note that this case does not present a question of anticipation under § 102(a). The PTO, in its

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3. While AVI originally sought a declaratory judgment of invalidity of all the claims of the Park patents, in its motion for summary judgment of invalidity AVI sought a declaration of invalidity only as to claim 3 of the '933 patent, claim 1 of the '027 patent, and claim 1 of the '361 patent. We consider only those claims to be part of this appeal and conclude that AVI has abandoned litigation with respect to the remaining claims of the patents.

Appendix A

Reexamination of the '933 patent, concluded that the Miyamoto patent does not anticipate the '933 patent under § 102(a), and no party on this appeal urges that the Park patents are anticipated by the Miyamoto patent under § 102(a). The issue before us is anticipation under § 102(g).

> Section 102 of the Patent Act provides in pertinent part that:
>
> A person shall be entitled to a patent unless –
>
> (g) . . . (2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

35 U.S.C. § 102. Therefore, "if a patentee's invention has been made by another, prior inventor who has not abandoned, suppressed, or concealed the invention, § 102(g) will invalidate that patent." *Apotex USA, Inc. v. Merck & Co.*, 254 F.3d 1031, 1035, 59 USPQ2d 1139, 1142 (Fed. Cir. 2001). Our recent decision in *Apotex* clarified the burdens of proof and production the parties bear when the validity of a patent is challenged under § 102(g). In *Apotex*, we held that the challenger of the validity of a patent must establish prior invention by clear and convincing evidence. If the challenger

does so, the burden of production shifts to the patentee to produce evidence sufficient to create a genuine issue of material fact as to whether the prior inventor abandoned, suppressed, or concealed the invention. If the patentee carries this burden of production, the challenger may rebut the evidence of abandonment, suppression, or concealment, with clear and convincing evidence to the contrary. *Id.* at 1037-38.

A.

Dow urges that the district court erred in invalidating the claims at issue under § 102(g). The record establishes that the foam made by AVI in March and August 1984 was made with polyethylene, an isobutane blowing agent, and a GMS stability control agent. The district court found that by making this foam AVI made a product, "meeting the limitations of the Park patents, as early as March 3, 1984, and in any event no later than August 22, 1984." *Dow Chem.*, 110 F. Supp.2d at 106. Dow has made no showing on appeal that the making of this foam did not meet the limitations of the claims-at-issue.[4]

Because the foam made by AVI would infringe the Park patents if made after the Park invention, it anticipates in fact the relevant claims of the Park patents, since it was made before Park's invention. *Lewmar Marine, Inc. v Barient, Inc.* 827 F.2d 744, 3 USPQ2d 1766 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988) ("[T]hat which would literally infringe if later in time anticipates if earlier than the date of invention."). Thus, AVI's production of foam on March 3,

4. As noted below in section B, we treat the invention as being a single invention, *i.e.*, the foam.

1984, and August 22, 1984, would invalidate the relevant claims of the Park patents, if the other requirements of § 102(g) were met.

However, Dow asserts that the district court nonetheless improperly invalidated the Park patents. Dow urges that § 102(g) does not apply to this case because no one at AVI qualifies as an "inventor" under § 102(g), since no one at AVI believed he invented anything during AVI's March and August 1984 activities. Dow points to statements made by AVI employees, concerning the foam they produced, that "[i]t never occurred to us to take a patent for something that we already licensed from JSP"; "[t]his technology was brought in from Japan"; and "[t]he Japanese are the inventors of the Miyamoto process and the AVI employees were applying that process to AVI's own production of foam." Dow urges that an "inventor" must be a person who conceives of an invention and reduces it to practice, either actually (by making the invention) or constructively (by filing a patent application), and that because the version of § 102(g) in effect at the time the Park patents were secured applied only to prior makings of the invention by another inventor, prior art under § 102(g) is limited to prior makings by someone who conceived the invention and reduced it practice.

Before enactment of the American Inventors Protection Act of 1999, Pub. L. no. 106-113, 113 Stat. 1501A-552, on November 29, 1999, § 102(g) prohibited an applicant from receiving a patent if, prior to the applicant's invention, "the invention was made in this country *by another* . . . ." 35 U.S.C. § 102(g) (1994) (emphasis added). The 1999 Act changed this language to: "the invention was made in this

country *by another inventor* . . . . " 35 U.S.C. § 102(g)(2) (1994) (emphasis added). In other words, the language of the pre-1999 statute did not specifically require that the invention be made by a prior *inventor*. Dow contends, however, that the statute was always understood to apply only to inventors, since § 102(g) deals with interference disputes between inventors with competing claims to an invention. No legislative history exists to explain the 1999 change in the statutory language. We agree with Dow that under the pre-1999 version of the statute, as with the current version, it must be shown that an "inventor" made the claimed invention to establish a first-inventor defense under § 102(g). However, we disagree with Dow's contention that no one at AVI was an inventor.

Dow's argument is that even if AVI reduced the Park invention to practice in 1984, AVI nevertheless failed to conceive of any invention that occurred as a result of its 1984 testing and production of foam, and thus no one at AVI can be considered to be an inventor, as required by 102(g). Dow cites *Heard v. Burton*, 333 F.2d 239, 251, 142 USPQ 97, 99-100 (CCPA 1964), and *Silvestri v. Grant*, 496 F.2d 593, 597, 181 USPQ 706, 708 (CCPA 1974), for the proposition that one cannot be an inventor without recognizing or appreciating that he invented something.

We disagree. *Heard* and *Silvestri* reveal the weakness of Dow's argument and support AVI's position that its employees are prior inventors under § 102(g). In *Heard*, our predecessor court held, in the context of an interference contest, that a party who first reduced to practice, but who "fail [ed] to recognize that he had produced a new form [of matter] . . . is

indicative that he never conceived the invention." 333 F.2d at 243, 142 USPQ at 100. Heard had used a method known in the prior art to produce a catalyst of alumina and platinum to reform naphtha and accidentally produced a new form of catalyst, but did not realize he had produced the new catalyst in his reaction until four years later and two years after the opposing party in the opposition filed a patent application for the new catalyst. *Silvestri* concerned a priority dispute, also in the context of an interference proceeding, over the inventorship of a new form of an antibiotic known as ampicillin. There, the CCPA re-affirmed the *Heard* rule that "there is no conception or reduction to practice where there has been no recognition or appreciation of the existence of the new form," 496 F.2d at 597, but stated that *Heard* "does not require that [a prior inventor] establish that he recognized the invention in the same terms as those recited in the count. The invention is not the language of the count but the subject matter thereby defined. [The prior inventor] must establish that he recognized and appreciated [the] new form." 496 F.2d at 599.

Thus, the cases establish that the date of the conception of a prior inventor's invention is the date the inventor first appreciated the fact of what he made. These cases do not establish that an inventor must be the first to appreciate the patentability of the invention, and we hold that he need not be.

We find undisputed, clear and convincing evidence in the record that AVI's employees immediately appreciated what they had made, and indeed its significance, when they made isobutane-blown foam in March and August 1984. AVI presented documentary evidence and the testimony of

witnesses who observed the production of foam in 1984 that AVI employees were aware the foam was made with polyethylene, an isobutane blowing agent, and a GMS stability control agent. AVI's witnesses testified that at the time of the testing and production they were "surprised" and "elated" at the ease of making the "beautiful," "good" foam that they made in March 1984. On March 14, 1984, eleven days after the first test of isobutane-blown foam, AVI purchased a license to the Miyamoto patent, evidencing its confidence that its invention would work for its intended purpose.[5] On August 27, 1984, five days after the production run in Glens Falls, Mr. Collins wrote to a representative of JSP to express his pleasure with the results of the August run, and his expectation that having a license to use the Miyamoto patent to produce foam would give AVI an advantage over the industry. Thus, we find that AVI clearly recognized and appreciated the existence of its new process and product. Whether AVI understood that it had produced a legally patentable invention is immaterial for purposes of § 102(g)(2). It is enough that the AVI employees appreciated the fact of their invention.

B.

Dow also asserts that, even if AVI is a prior inventor, AVI suppressed or concealed the invention such that its invention does not qualify as § 102(g) prior art.

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5. That AVI needed a license to the Miyamoto patent to produce its isobutane-blown foam does not mean that AVI did not advance the art over the Miyamoto invention, but only that AVI's/Dow's invention was an improvement over the dominant Miyamoto patent.

Appendix A

When addressing the issue of abandonment, suppression, or concealment, Dow does not distinguish between the inventions claimed in the '933, the '027, and the '361 patents. Rather, Dow refers to "the Park invention" in the singular and states that "the Park invention is included in all three patents-at-issue . . . . " Appellant's Brief at 8. Indeed, Dow asserts that "[t]o invalidate the Park patents under § 102(g) . . . AVI had the burden of proving . . . that it conceived and reduced to practice *the Park invention* . . . and that it did not abandon, suppress or conceal *its invention.*" Appellant's Brief at 36 (emphases added). And Dow admits that AVI's invention was "publicly disclosed [in] August/September 1986." Appellant's Reply Brief at 28. Dow treats the sole invention as being the finished foam composition, and so do we for the purposes of the analysis of abandonment, suppression, or concealment.

Our case law distinguishes between two types of abandonment, suppression, or concealment. *Apotex*, 254 F.3d at 1038. The first is implicated when an inventor actively abandons, suppresses, or conceals his invention from the public. *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1567, 39 USPQ2d 1895, 1901 (Fed. Cir. 1996). The second occurs when abandonment, suppression, or concealment may be inferred based upon the prior inventor's unreasonable delay in making the invention publicly known. *Int'l Glass Co. v. United States*, 408 F.2d 395, 403, 159 USPQ 434, 441 (Ct. Cl. 1969). The latter type is allegedly involved here. The failure to file a patent application, *Peeler v. Miller*, 535 F.2d 647, 654, 190 USPQ 117, 121 (CCPA 1976), to describe the invention in a published document, *Corona Cord Tire Co. v. Dovan Chem. Corp.*, 276 U.S. 358, 372-73 (1928), or to use the invention publicly, *Lutzker v. Plet*, 843 F.2d 1364, 1367, 6 USPQ2d

1370, 1372 (Fed. Cir. 1988), within a reasonable time after first making the invention may constitute abandonment, suppression, or concealment. *See also Int'l Glass*, 408 F.2d at 403 (collecting cases); *Paulik v. Rizkalla*, 760 F.2d 1270, 1274-75, 226 USPQ 224, 227 (Fed. Cir. 1985) (collecting cases).

In this case, the district court erred in holding that AVI could not have abandoned, suppressed, or concealed the invention because it had previously become publicly known when the Miyamoto patent issued in 1974. The court held that "the Miyamoto patent was issued in 1974. The invention was disclosed to the public at that time." But as we stressed above, the potentially invalidating invention is contained in the 1984 activities of AVI, not in the disclosure of the Miyamoto patent. Thus, the issuance of a patent to *Miyamoto* has no bearing on whether AVI abandoned, suppressed, or concealed *its* invention. We nonetheless conclude that the district court reached the correct result, albeit for the wrong reason.

Our case law has not set strict time limits regarding the minimum or maximum periods between a prior inventor's first making of the invention and the subsequent disclosure of the invention necessary to establish or infer suppression, or concealment. *Fujikawa*, 93 F.3d 1559, 1568; *Checkpoint Sys., Inc. v. U.S. Int'l Trade Comm'n*, 54 F.3d 756, 761, 35 USPQ2d 1042, 1046 (Fed. Cir. 1995) ("there is no particular length of delay that is per se unreasonable"). Although unreasonable delay in bringing knowledge of the invention to the public may raise an inference of suppression or concealment, *Apotex*, 254 F.3d at 1038, "[m]ere delay, without more, is not sufficient to establish suppression

or concealment," *Young v. Dworkin*, 489 F.2d 1277, 1281, 180 USPQ 388, 391 (CCPA 1974). Rather, "each case involving the issue of suppression or concealment must be considered on its own particular set of facts." *Paulik*, 760 F.2d at 1275 (quoting *Shindelar v. Holdeman*, 628 F.2d 1337, 1343, 207 USPQ 112, 117 (CCPA 1980)).

In its main brief, Dow urges that the two and one-half year delay between AVI's first making and publicly disclosing its invention "gives rise to a presumption that AVI abandoned, suppressed and concealed its alleged invention." Appellant's Brief at 38-39. Dow does not cite any authority holding that a delay of a certain length of time gives rise to presumption of abandonment, suppression, or concealment. We are not aware of any such authority and decline to create any such rule.

Dow further urges in its brief that because the two and one-half year period between AVI's reduction to practice and public disclosure of its invention allegedly "was solely because AVI was waiting until it could commercialize its product" and not because AVI was improving or modifying the invention; and therefore this delay in disclosing the invention cannot be excused. *Id.* at 39 (citing *Lutzker v. Plet*, 843 F.2d 1364, 1367-68, 6 USPQ2d 1370, 1372 (Fed. Cir. 1988) and *Young v. Dworkin*, 489 F.2d 1277, 1281-82). We note that, unlike this case, both *Lutzker* and *Young* involved interference disputes between two inventors who both had filed patent applications. The issue in those cases was whether the prior inventor had abandoned, suppressed, or concealed his invention between first making it and filing his patent application. In *Lutzker* we held a long delay between a prior inventor's first reduction to practice and subsequent filing

of a patent application may be excused if the inventor worked during that period to improve or perfect the invention disclosed in the patent application, *Lutzker*, 843 F.2d at 1367, *accord Young*, 489 F.2d at 1281, but if the inventor's activities during that period were directed only to commercialization and were not "reflected in his patent application," they could not be excused, *Lutzker* 843 F.2d at 1368, *accord Young*, 489 F.2d at 1281-82. In *Checkpoint*, 54 F.3d at 762-63, we distinguished *Lutzker* on the ground that *Checkpoint* involved a prior inventor who did not file a patent application but who publicly disclosed his invention by commercializing it four years after first making it. In *Checkpoint*, we stated that "[t]he public thus received the benefit of [the prior inventor's] invention promptly when Checkpoint's integral commercial system was brought to market. [The prior inventor] was under no duty to file a patent application and, although he may have failed to establish his own right to a patent, there was no lack of diligence in his attempts to make the benefit of his invention available to the public." *Id.* at 763.

Checkpoint establishes that "[i]n cases in which an invention is disclosed to the public by commercialization, courts have excused delay upon proof that the first inventor engaged in reasonable efforts to bring the invention to market." *Id.* at 762. Here, AVI's public disclosure of its isobutane-blown foam invention occurred through commercialization of its foam. Dow has produced no evidence showing that AVI's efforts to commercialize its prior invention entailed any abandonment, suppression, or concealment of the invention. To the contrary, during the 30 months between first making the isobutane-blown foam and selling the foam, AVI actively and continuously took

steps towards the commercialization of the foam, including the procurement of financing to build a new production plant and the attention to safety considerations associated with using isobutane as a blowing agent. A prior inventor is not required to take the fastest route to commercialization, but only to make "reasonable efforts to bring the invention to market." *Id.* Because the undisputed evidence shows that AVI made reasonable efforts towards commercialization, Dow has not shown, even prima facie, that AVI suppressed or concealed its invention.

Because there is no genuine issue of material fact, and AVI has produced clear and convincing evidence that it made the Park invention prior to Park's date of invention and Dow has not produced any evidence that AVI abandoned, suppressed, or concealed the invention, we find the claims-at-issue of the Park patents are invalid under § 102(g)(2). We accordingly affirm the decision of the district court.

No costs.

APPENDIX B — MEMORANDUM-DECISION AND ORDER OF THE UNITED STATES DISTRICT COURT, NORTHERN DISTRICT OF NEW YORK DATED AND FILED AUGUST 15, 2000

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF NEW YORK

95-CV-1357

DOW CHEMICAL COMPANY,

Plaintiff,

-v-

ASTRO-VALCOUR, INC.,

Defendant.

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DAVID N. HURD
United States District Judge

MEMORANDUM-DECISION and ORDER

I. INTRODUCTION

The Dow Chemical Company ("Dow") commenced this action alleging patent infringement by defendant Astro-Valcour, Inc. ("AVI"), pursuant to 35 U.S.C. § 271. AVI asserted the affirmative defense of patent invalidity. The claims-at-issue were construed by Memorandum-Decision & Order. *See Dow Chem. Co. v. Astro-Valcour, Inc.*, 47 F.Supp.2d 294 (N.D.N.Y. 1999)(McAvoy, C.J.). AVI now moves for summary judgment on that defense. Dow opposes that motion and cross-moves for dismissal of the affirmative defense and a finding of infringement[1] by AVI. Oral argument was heard on January 14, 2000, in Utica, New York. Decision was reserved.

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1. Dow initially moved for a finding of willful infringement, but has withdrawn that request without prejudice to renew pending further discovery.

Appendix B

II. FACTS

Prior to the middle 1980's manufacturers commonly used chlorofluorocarbon blowing agents to produce polyethylene foam. Environmental concerns prompted the search for a more environmentally-friendly, cost-effective blowing agent.

Non-party Japan Styrene Paper Company ("JSP") held a Japanese patent for producing foam using a non-chlorofluorocarbon blowing agent. JSP filed a United States patent application in 1968. The U.S. patent, No. 3,808,300, (the "Miyamoto patent") was issued on April 30, 1974. In 1983 AVI purchased a license from JSP to use the Miyamoto patent process, which disclosed the use of various butanes as blowing agents and a glycerol monostearate ("GMS") stability control agent.

According to AVI, it produced foam following the teachings of the Miyamoto patent, using isobutane as the blowing agent, in a laboratory on March 3, 1984. On August 22, 1984, AVI made foam following the Miyamoto patent teachings, using isobutane as the blowing agent, on its production extruder at its Glen Falls production facility. Due to the flammability of isobutane, safety concerns played a major role as AVI began the process of converting to the use isobutane as a blowing agent at its Glen Falls facility. Difficulties with the conversion ensued, however, and AVI abandoned the conversion at Glen Falls and, in the winter of 1985/1986, built a new facility in Plymouth, Indiana. Initially AVI produced foam at the plant using chlorofluorocarbon blowing agents such as Freon, but then converted to use of isobutane. AVI first manufactured on a production scale and

sold foam following the teachings of the Miyamoto patent using isobutane as the blowing agent and a GMS stability control agent in the August/September 1986 time frame.

Meanwhile, Dow conceived a process using isobutane as a blowing agent to manufacture polyethylene foam on August 28, 1984. Dow reduced its invention to practice on September 13-14, 1984. Dow filed patent applications on December 24, 1985, disclosing the process of producing foam using an isobutane blowing agent with a GMS stability control agent. U.S. Patent No. B1 4,640,933 ("the '933 patent"); U.S. Patent No. 4,694,027; and U.S. Patent No. 4,663,361 (collectively the "Park patents") were issued in 1987. The Miyamoto patent was not referenced as prior art on the Park patents. Dow requested Reexamination of the '933 patent in 1994, questioning the patentability of the Park process due to the existence of the Miyamoto patent, among others. A Certificate of Reexamination affirming the patentability of the '933 patent was issued in September 1996.

Dow alleges that AVI has been and is infringing the Park patents by its production of foam meeting the limitations of the claims-at-issue of these patents.[2] AVI concedes that it is manufacturing and selling foam meeting limitations of the claims-at-issue of the Park patents.

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2. Dow also initially alleged infringement of two "perforation patents," U.S. Patent No. 5,424,016 ("the '016 patent") and U.S. Patent No. 5,585,058 ("the '058 patent"). All claims relating to the '016 and '058 patents were dismissed by stipulation of the parties.

Appendix B

III. DISCUSSION

A. Summary Judgment Standard

Summary judgment must be granted when the pleadings, depositions, answers to interrogatories, admissions and affidavits show that there is no genuine issue as to any material fact, and that the moving party is entitled to summary judgment as a matter of law. Fed. R. Civ. P. 56; *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247 (1986); *Richardson v. New York State Dep't of Correctional Servs.*, 180 F.3d 426, 436 (2d Cir. 1999). Facts, inferences therefrom, and ambiguities must be viewed in a light most favorable to the nonmovant. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586 (1986); *Richardson*, 180 F.3d at 436; *Project Release v. Prevost*, 722 F.2d 960, 968 (2d Cir. 1983). Once the moving party has met the initial burden of demonstrating the absence of a genuine issue of material fact, the nonmoving party "must set forth specific facts showing that there is a genuine issue for trial." Fed. R. Civ. P. 56; *Liberty Lobby, Inc.*, 477 U.S. at 250; *Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986); *Matsushita Elec. Indus. Co.*, 475 U.S. at 587. At that point the nonmoving party "must do more than simply show that there is some metaphysical doubt as to the material facts." *Matsushita Elec. Indus. Co.*, 475 U.S. at 586. To withstand a summary judgment motion, sufficient evidence must exist upon which a reasonable jury could return a verdict for the nonmovant. *Liberty Lobby, Inc.*, 477 U.S. at 248-49; *Matsushita Elec. Indus. Co.*, 475 U.S. at 587.

Appendix B

B. Invalidity pursuant to 35 U.S.C. § 102(g)

AVI seeks summary judgment on its affirmative defense that the Park patents are invalid. In opposition Dow argues that the Park patents are valid and seeks dismissal of the defense.

> Section 102(g) of Title 35 of the U.S. Code provides for entitlement
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> to a patent unless – (g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

Thus, a claim of patent infringement can be defeated by establishing the invalidity of the patent based upon § 102(g). *Checkpoint Sys., Inc. v. United States Int'l Trade Comm'n,* 54 F.3d 756, 761 (Fed. Cir. 1995). A patent is presumed to be valid; therefore, invalidity can be established only upon clear and convincing evidence. *Id.* The party asserting invalidity must establish that (1) there was a prior invention; and (2) such prior invention was not abandoned, suppressed, or concealed. *Id.*

Appendix B

1. *Prior Invention*

An invention is made when it is conceived and physically reduced to practice. 1 Peter D. Rosenberg, Patent Law Fundamentals § 10.01, at 10-5 (2d ed. 2000) (hereinafter "Rosenberg"). Thus, the earliest inventor to reduce an invention to practice is ordinarily entitled to priority. *Holmwood v. Sugavanam,* 948 F.2d 1236, 1238 (Fed. Cir. 1991). An actual reduction to practice is a physical embodiment of the invention that " 'actually worked for its intended purpose.' " *Id.* (quoting *Newkirk v. Lulejian,* 825 F.2d 1581, 1582 (Fed. Cir. 1987). A reduction to practice could also be constructive, with the filing of a United States patent application. 2 Rosenberg § 10.01[1][b], at 10-18. Reduction to practice is a legal determination, not a factual one. *Holmwood,* 948 F.2d at 1238. Thus, the first to either physically make the invention or file a patent application is considered the inventor.

AVI has submitted evidence that it manufactured a physical embodiment of the Miyamoto invention,[3] meeting the limitations of the Park patents, as early as March 3, 1984, and in any event no later than August 22, 1984.[4] Frederick

3. Dow objects to AVI referring to the invention as its own. However, as licensee of the invention, AVI "owns" the right to practice the invention in the United States. *See generally* 3 Rosenberg § 16.01[b]. For simplicity the invention will be referred to as belonging to AVI.

4. Dow objects to AVI's reference to its production of a physical embodiment of the Miyamoto patent, that is, a polyethylene foam made using isobutane as a blowing agent and a GMS stability control agent, as a "reduction to practice." For ease of readability, however, AVI's production of a physical embodiment of the Miyamoto patent will be referred to as a reduction to practice.

H. Collins, a former vice-president of AVI, testified to his presence during the manufacture of polyethylene foam using an isobutane blowing agent and a GMS stability control agent on March 3, 1984. (AVI Rule 7.1 Statement Ex. 12, at 14-16.) Robert G. Hooper, a project engineer for AVI at the time, testified that AVI engineers produced a polyethylene foam using an isobutane blowing agent and a GMS stability control agent in the laboratory on March 3, 1984. *Id.* Ex. 13, at ¶ 5; Ex. 19, at 264-68, 423-24. He further testified that on two occasions, the first being March 3, 1984, he "hooked up" an isobutane tank to manufacturing equipment and provided ventilation during production of polyethylene foam using an isobutane blowing agent and a GMS stability control agent. *Id.* Ex. 19, at 264-68, 423-24. Ralph Nettleton, a production supervisor for AVI at the time, testified that he was present and observed, on March 3, 1984, AVI manufacture polyethylene foam using an isobutane blowing agent and a GMS stability control agent. *Id.* Ex. 17, at 18-30. An AVI test sheet shows production of polyethylene foam using an isobutane blowing agent and a GMS stability control agent on March 3, 1984. *Id.* Ex. 18.

Dow attempts to call into question whether the March 3, 1984, trial run used normal butane ("n-butane") rather than isobutane. Dow points to the occasional reference to "butane" by witnesses, as well as to the March 3, 1984, test sheet which lists "butane" as the blowing agent. *See id.* Ex. 18. This is insufficient, however, to create a genuine issue of material fact as to whether n-butane was used, rather than isobutane. The test sheet references "isobutane" twice, and never mentions "n-butane." The witnesses just listed all clearly state, in no uncertain terms, that they witnessed the production of polyethylene foam using isobutane as a blowing

agent. Even the person who actually hooked up the isobutane tank so testified. *Id.* Ex. 19, at 264-68. 423-24. Dow has submitted no evidence that n-butane was used. Given the overwhelming evidence submitted by AVI that isobutane was used on March 3, 1984, and the lack of contrary evidence, no genuine issue remains for trial.

Moreover, on August 22, 1984, AVI produced polyethylene foam on a production line using an isobutane blowing agent and a GMS stability control agent. *Id.* ¶ 27. Dow does not contest the accuracy of this fact. (*See* Dow Response to AVI Rule 7.1 Statement.)

Dow argues that the invention was not AVI's, since JSP conceived the invention, in Japan, and constructively reduced the invention to practice in the United States by filing the Miyamoto patent application. Further, Dow contends that because JSP constructively reduced the invention to practice by filing the Miyamoto patent application, AVI's later reduction to practice has no meaning. Should Dow's argument be accepted, then the invention taught by the Park patent was anticipated by the Miyamoto invention, the patent application for which was filed in 1968 and granted in 1974, well before Dow's alleged conception. Moreover, Dow cites no case law that supports its proposition that the actual reduction to practice by a licensee of a United States patent holder, undertaken prior to conception by a later inventor, is ineffective to constitute prior art.[5] To the contrary, such reduction to

5. Additionally, the Federal Circuit has found that a prior inventor who has reduced the invention to practice, and then is inactive for a long period of time, does not lose priority when the

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practice anticipates the later concept. *See generally,* Rosenberg § 10.01. Accordingly, this line of argument by Dow is futile and additional discussion of its rejection is unnecessary.

AVI has produced clear and convincing evidence that it physically made polyethylene foam using an isobutane blowing agent and a GMS stability control agent on March 3, 1984, and on August 22, 1984. (*See* AVI Rule 7.1 Statement Ex. 12, at 14-16; Ex. 13, at ¶ 5; Ex. 17, at 18-30; Ex. 18; Ex. 19, at 264-68, 423-24.) That foam concededly meets the limitations of the Park patents. Accordingly, unless AVI abandoned, suppressed, or concealed its invention, the Park patents, reduced to practice on September 13-14, 1984, were anticipated by the AVI invention.

2. *Abandon, Suppress or Conceal*

A first inventor may lose priority to its invention if it abandons, suppresses, or conceals the invention. 35 U.S.C. § 102(g); *Checkpoint Sys., Inc.,* 54 F.3d at 761; *Paulik,* 760 F.2d at 1272. This rule is in keeping with one of the purposes of the patent law, to encourage public disclosure and to

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(Cont'd)

prior inventor resumes work on the invention before a later inventor reduces to practice the same concept. *Paulik v. Rizkalla,* 760 F.2d 1270, 1272 (Fed. Cir. 1985). This is analogous to the situation here, where a prior inventor (JSP) reduced the invention to practice (by filing a U.S. patent application), then, after a long period of inactivity, the licensee of the prior inventor (AVI) resumes work on the invention. Priority to the prior inventor (JSP/AVI) is not lost when a later inventor (Dow) reduces to practice the same concept, after the licensee of the prior inventor (AVI) resumes work on the invention.

penalize "the unexcused delay or failure of a first inventor to share the 'benefit of the knowledge of [the] invention' with the public after the invention has been completed." *Checkpoint Sys., Inc.*, 54 F.3d at 761 (quoting *Paulik*, 760 F.2d at 1280).

Dow contends that the two and one-half year delay between AVI's first production of the foam in March 1984 and commercialization of the foam in September 1986 was unreasonable and therefore constitutes abandonment, suppression or concealment for the purposes of § 102(g). Dow further argues that the invention was not publicly disclosed until commercialization.

Dow misconstrues the law.[6] Public disclosure via commercialization is helpful to negate a finding of abandonment, suppression or concealment where the invention has not otherwise been publicly disclosed. *See, e.g., Checkpoint Sys., Inc.*, 54 F.3d at 762. "One way a prior inventor may avoid the disqualifying effect of § 102(g) is by promptly filing a patent application claiming the invention." *Id.* at 761. Thus, where a patent claims the invention, public disclosure is not at issue. The patent is a public disclosure. *Cf. id.* at 763 (noting that "[f]iling a patent application is not the only way to bring the benefit of knowledge of an invention to the public").

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6. The case law cited by Dow, and the reasoning set forth in its brief, applies when there is a priority contest, but no patent application has been filed by the first inventor. *See, e.g., Checkpoint Sys., Inc.*, 54 F.3d at 761-63 (finding that a prior inventor who had not filed a patent application had not abandoned the invention, therefore affirming the invalidation of a subsequent patent under § 102(g)).

Here, the Miyamoto patent was issued in 1974. The invention was disclosed to the public at that time. Dow cites no case law indicating that after a patent has been issued, abandonment, suppression or concealment becomes an issue. AVI did not abandon, suppress, or conceal the invention.

C. Reexamination of '933 Patent

Dow requested reexamination of the '933 patent, questioning its patentability over prior art references, including the Miyamoto patent. The Patent and Trademark Office issued a reexamination certificate on September 10, 1996. Dow contends that AVI cannot overcome the presumption of validity of the '933 patent, in light of the reexamination by the Patent and Trademark Office.

Reexamination before the Patent and Trademark Office and litigation in the courts are distinct proceedings. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988). In reexamination proceedings, there is no presumption of validity and the standard of proof is preponderance of the evidence. *Id.* Additionally, the proof in reexamination proceedings is limited to review of prior art patents and printed publications. *Id.* On the other hand, in court proceedings there is a presumption of validity, and the party seeking to invalidate a patent must do so by clear and convincing evidence. *Id.* Further, the court may consider grounds other than prior art patents and printed publications in determining patent validity. *Id.; American Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1360 (Fed. Cir.)(court must consider "[a]ll evidence bearing on the validity issue, whether considered by the [Patent and

Trademark Office] or not), *cert. denied*, 469 U.S. 821 (1984). There is "nothing untoward about the [Patent and Trademark Office] upholding the validity of a reexamined patent which the district court later finds invalid. This is essentially what occurs when a court finds a patent invalid after the [Patent and Trademark Office] has granted it." *Ethicon, Inc.*, 849 F.2d at 1428. While "deference is due the Patent and Trademark Office decision to issue the patent with respect to evidence bearing on validity which it considered but no such deference is due with respect to evidence it did not consider." *American Hoist & Derrick Co.*, 725 F.2d at 1360. The burden of proving invalidity by clear and convincing evidence remains unchanged, despite any decision of the Patent and Trademark Office. *Id.*

In addition to the prior art Miyamoto patent, AVI has submitted proof establishing that it practiced the Miyamoto patent in 1984, prior to Dow's reduction to practice of the concept. This evidence was not before the Patent and Trademark Office. *See Ethicon, Inc.*, 849 F.2d at 1426 (Patent and Trademark Office may only consider prior art patents and printed publications). Thus, no deference is due to the Patent and Trademark Office's determination that the '933 patent remained patentable despite the Miyamoto prior art.

IV. CONCLUSION

AVI clearly and convincingly established that it produced polyethylene foam using isobutane as a blowing agent and a GMS stability control agent in March and August 1984, thereby anticipating the invention taught in the Park patents and first reduced to practice by Dow in September 1984.

Abandonment, suppression, or concealment were not in issue, as the invention was publicly disclosed by Miyamoto patent filed in 1968 and granted in 1974. Deference is not accorded to the Reexamination Certificate issued by the Patent and Trademark Office on the '933 patent, as it could not consider the evidence of AVI's prior reduction to practice of the invention. AVI has established by clear and convincing evidence that the claims-at-issue of the Park patents are invalid pursuant to 35 U.S.C. § 102(g) and it is therefore entitled to summary judgment on its affirmative defense brought under that section. In light of the foregoing, the cross-motion for summary judgment brought by Dow need not be analyzed. Accordingly, it is

ORDERED that

1. The claims-at-issue of U.S. Patent No. B1 4,640,933; U.S. Patent No. 4,694,027; and U.S. Patent No. 4,663,361 are invalid;

2. AVI's motion for summary judgment on its affirmative defense that the claims-at-issue of U.S. Patent No. B1 4,640,933; U.S. Patent No. 4,694,027; and U.S. Patent No. 4,663,361 are invalid under 35 U.S.C. § 102(g) is GRANTED;

3. Dow's cross-motion for partial summary judgment is DENIED as moot; and

4. This action is dismissed in its entirety.

Appendix B

The Clerk of the Court is directed to enter judgment accordingly.

IT IS SO ORDERED

s/ David N. Hurd
United States District Judge

Dated: August 15, 2000
Utica, New York

APPENDIX C — ORDER OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT DENYING PETITION FOR REHEARING DATED AND FILED DECEMBER 6, 2001

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

ORDER

A combined petition for panel rehearing and for rehearing en banc having been filed by the APPELLANT, and a response thereto having been invited by the court and filed by the APPELLEE, and the petition for rehearing having been referred to the panel that heard the appeal, and thereafter the petition for rehearing en banc and response having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for panel rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the petition for rehearing en banc be, and the same hereby is, DENIED.

The mandate of the court will issue on December 13, 2001.

FOR THE COURT,

s/ Jan Horbaly
Jan Horbaly
Clerk

Dated: December 6, 2001

APPENDIX D — RELEVANT STATUTES

35 U.S.C. § 102 Conditions for patentability; novelty and loss of right to patent

A person shall be entitled to a patent unless –

(g) (1) during the course of an interference conducted under section 135 or section 291, another inventor involved therein establishes, to the extent permitted in section 104, that before such person's invention thereof the invention was made by such other inventor and not abandoned, suppressed, or concealed, or (2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

(July 19, 1952, ch. 950, §1, 66 Stat. 797; July 28, 1972, Pub. L. 92-358, §2, 86 Stat. 502; Nov. 14, 1975, Pub. L. 94-131, §5, 89 Stat. 691; Nov. 29, 1999, Pub. L. 106-113, §§4505, 4806, 113 Stat. 1501A-565, 590.)